

### REMARKS

In support of Applicant's remarks in this Reply and as a submission of evidence in the present application, Applicant submits concurrently herewith a Second Declaration of Robert S. Brown Under 37 C.F.R. § 1.132 ("the Second Declaration"). Also in support of Applicant's remarks reference is made to the Declaration of Robert S. Brown Under 37 C.F.R. § 1.132 ("the First Declaration") filed on July 24, 2003, in connection with the present application. Herein, Applicant refers collectively to the First Declaration and the Second Declaration as "the Declarations."

As indicated at least in paragraphs 1-4 of the Declarations and the documents cited therein, Prof. Brown has extensive experience with the field of mass spectrometry and with practitioners in that field. Accordingly, Applicant respectfully requests that the Examiner consider and give weight to the statements of fact, reasoning, observations and opinions of Prof. Brown in the Declarations.

#### Status of the Claims

Claims 75-98 are pending in the application and stand rejected. Claims 1-74 were previously canceled without prejudice. Applicant hereby cancels without prejudice claims 88, 89, 96 and 98. Accordingly, after entry of this paper claims 75-87, 90-94, 95 and 97 are pending for examination.

#### Amendments to the Claims

Please cancel without prejudice claims 88, 89, 96 and 98.

#### Rejections Under 37 C.F.R. § 1.75

Claims 90, 96 and 98 stand rejected under 37 C.F.R. § 1.75 as allegedly duplicative of, respectively, claims 88, 95 and 97. Without acquiescing to the rejection, Applicant has cancelled claims 88, 96 and 98. As a result, Applicant submits that the rejections under 37 C.F.R. § 1.75 are now moot.

*Rejections Under 35 U.S.C. § 112*

Claim 88 stands rejected as allegedly failing to meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Without acquiescing to the rejection, Applicant has cancelled claim 88. As a result, Applicant submits that the rejections under 35 U.S.C. § 112, first and second paragraphs are now moot.

*Rejections under the Judicially Created Doctrine of Obviousness-Type Double Patenting*

Claims 75-98 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly not patentably distinct from claims 75-161 of U.S. Patent No. RE 37,485.

Applicant respectfully submits that claims 75-98 are novel over claims 75-161 of U.S. Patent No. RE 37,485 and non-obvious. Nevertheless, without acquiescing to the rejection, submitted herewith is a Terminal Disclaimer under 37 C.F.R. § 1.321(c) together with the appropriate fee under 37 C.F.R. § 1.20(d). As a result, Applicant submits that the rejections under the judicially created doctrine of obviousness-type double patenting are now moot.

*Rejections Under 35 U.S.C. § 251*

Claims 75-98 stand rejected under 35 U.S.C. § 251 as being based on an allegedly defective Reissue Oath/Declaration. Applicant wishes to thank the Examiner for the courtesy extended in an interview with the undersigned on October 21, 2003 to clarify the issues surrounding this rejection. Based on this interview, it is Applicant's understanding that this rejection is premised on the presumption that the at least one error set forth in the Reissue Oath/Declaration submitted with the parent application (issued as RE 37,485) to the present application was corrected upon the issuance of RE 37,485, and thus it is presumed that the present application must be correcting another error for which a new Reissue Oath/Declaration should be submitted.

Applicant respectfully submits that in the present case, the above presumption on which the rejection under 35 U.S.C. § 251 is based does not apply. Specifically, the present application is a continuing application pursuing claims which were present in the

parent application (issued as RE 37,485) but which were withdrawn without prejudice prior to the allowance of the parent application. The claims of the present application thus continue to seek to correct, at least in part, the at least one error set forth in the Reissue Oath/Declaration but are of differing scope than the claim issued in the parent application. Accordingly, Applicant submits that the Reissue Oath/Declaration of the present application is not defective, and Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 75-87, 90-94, 95 and 97 under 35 U.S.C. § 251.

Rejections Under 35 U.S.C. § 103(a)

Claims 75-81 and 84-98 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,288,644 to Beavis et al. ("Beavis") in view of "An Automatic Analytical Laboratory for Mass-Spectrometric Isotopic-Dilution Analysis of Uranium and Plutonium in Fuel Solutions," *Safeguards Tech., Proc. Symp.*, 2, pages 165-176 (1970) by Wilhelmi et al. ("Wilhelmi"); U.S. Patent No. 5,382,793 to Weinberger et al. ("Weinberger"); and "Automated Sample Transport System for Chromatography/Secondary Ion Mass Spectrometry," *Rev. Sci. Instrum.* 60, pages 1071-1074 (1989) by Duffin et al. ("Duffin"). Claim 82 is rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Beavis in view of Wilhelmi, Weinberger and Duffin as applied to claim 81, and further in view of U.S. Patent No. 5,037,611 to Ledford, Jr ("Ledford"). Claim 83 is rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Beavis in view of Wilhelmi, Weinberger and Duffin as applied to claim 75, and further in view of "A direct insertion sample handling system for mass spectrometers," *Int. J. Mass Spectrom. Ion Phys.*, 3, pages 159-160 (1969) by Bakker et al ("Bakker"). Herein Applicant refer to Beavis, Wilhelmi, Weinberger, Duffin, Ledford, and Bakker collectively as the cited references.

Applicant respectfully requests that the rejection of claims 75-87, 90-94, 95 and 97 under 35 U.S.C. § 103 be reconsidered and withdrawn for at least the following reasons:

- (a) the cited combination of references together with the knowledge of one of ordinary skill in the art fail to establish a prima facie case of obviousness against these claims; and
- (b) even if a prima facie case of obviousness has been established, Applicant has and herein provides uncontested evidence that rebuts any such prima facie case and

demonstrates that claims 75-87, 90-94, 95 and 97 are nonobvious. Applicant more specifically sets forth these reasons below.

1. The Office Action fails to establish a prima facie case of obviousness because Beavis does not motivate one of ordinary skill to seek or combine Weinberger or Wilhelmi with Beavis to practice any of Applicant's claims.

The Office Action appears to rely on the paragraph spanning columns 4-5 in Beavis as the basis for asserting that one of ordinary skill in the art would have sought, modified and combined Weinberger and Wilhelm with Beavis. Specifically, the Office Action appears to rely on the passage of Beavis, at column 5, lines 5-10, as the basis for the conclusion that Beavis suggests automation of disk insertion and attachment. The Office Action at page 10 asserts that: "in the paragraph bridging columns 4-5, Beavis is clearly concerned with the time of sample analysis as well as well as the loading and pump down time. In lines 5-10 on column 5 Beavis distinguishes the insertion method from the manual method disclosed in a then copending application (see column 4, lines 4-9 of US Patent 5,045,694). It is clear that the reference to loading and pumpdown found in the sentence bridging the two columns is talking about loading the sample into the mass spectrometer since the first sentence of the paragraph sets the time as after the samples are deposited on the disk. From this one would gather that the insertion of the sample disk was not intended to be manual."

Applicant must respectfully disagree with this reading of Beavis and in particular the reading column 5, lines 5-10, in Beavis and the '694 patent. The paragraph spanning columns 4-5 (column 4, line 63, to column 5, line 18), reads as follows:

Once the samples in suitable matrix are deposited on the disk, the disk may be inserted into the ion source of a mass spectrometer through the vacuum lock. Any gas introduced in this procedure must be removed prior to measuring the mass spectrum. Loading and pump down of the spectrometer typically requires two to three minutes, and the total time for measurement of each sample to obtain a spectrum is typically one minute or less. Thus 50 or more complete DNA spectrum may be determined per hour according to the present invention. Even if the samples were manually loaded, as disclosed is copending U.S. Pat. application Ser. No. 07/413,321 filed Sept. 27, 1989 and hereby incorporated by reference, less than one hour would be required to obtain sequence data on a particular segment of DNA,

which might be from 400 to 600 bases in length. Even this latter technique is much faster than the conventional DNA sequencing techniques, and compares favorably with the newer automated sequencers using fluorescence labeling. The technique of the present invention does not, however, require the full-time attention of a dedicated, trained operator to prepare and load the samples, and preferably is automated to produce 50 or more spectrum per hour.

The context of the paragraph from which the passage at column 5, lines 5-10, in Beavis has been pulled makes clear that the term “loaded” when used with the term “samples” refers to the loading of samples onto the disk (for example by spotting) not the insertion of the disk into the ion source region or onto the other stepper motor (item number 28) for at least the facts and reasons of paragraphs 17-19 in the First Declaration, Paragraphs 17-20 in the Second Declaration, and the following five reasons.

First, the passage refers to the loading of a sample, not the disk. When describing the loading the mass spectrometer Beavis repeatedly refers to this as loading the disk, and when Beavis describes the loading of samples repeatedly refers to the loading them onto the disk.

Second, Beavis at column 5, lines 5-10, makes no reference to insertion of a disk, these lines read: “Even if the samples were manually loaded, as disclosed is copending U.S. Pat. application Ser. No. 07/413,321 filed Sept. 27, 1989 and hereby incorporated by reference, less than one hour would be required to obtain sequence data on a particular segment of DNA, which might be from 400 to 600 bases in length.”

Third, column 5, lines 5-10 contrasts itself with the manual loading disclosed in USSN 07/413,32, issued as U.S. Patent No. 5,045,694 (“the ‘694 patent”). The only direct mention of sample loading in the ‘694 patent refers to loading of sample on a probe tip, specifically the ‘694 patent at column 6, lines 29-31 states: “With a typical sample loading of 0.1-20 p mol of analyte on the probe tip (3 mm<sup>2</sup>) good signals were observed.” (emphasis added). Moreover, the portion of the ‘694 patent cited in the Office Action (column 4, lines 4-9) reads: “The probe 10 is manually inserted and may be manually removed from the round bore 12 of the metal wall 13 of the spectrometer”; makes no reference to sample loading and thus cannot be what column 5, lines 5-10 of Beavis is contrasting itself with.

Fourth, Beavis himself makes clear that what he means by automated versus manual loading refers to loading samples onto the disk. For example, Beavis describes at column 4, lines 42-43, that: “Fig. 1 depicts a suitable automated DNA sample preparation and loading technique.” (emphasis added). Fig. 1 depicts an automated approach to sample preparation followed by spotting on the disk. This is clearly what Beavis refers to at column 5, lines 5-10, and at the end of the paragraph spanning columns 4-5 where he states: “The technique of the present invention does not... require the full time attention of a dedicated, trained operator to prepare and load the samples.”

Fifth, the time savings Beavis purports to provide with his invention in the paragraph spanning columns 4 and 5, relate to using mass spectrometry instead of gel electrophoresis to analyze a sample. (See also, Beavis, Background of the Invention, where Beavis clearly purports to provide a technique faster than gel electrophoresis methods). Nowhere does Beavis suggest that time savings are to be obtained by automation of disk insertion. Rather, all the time savings referred to in Beavis refer either to those provided by mass spectrometry versus gel electrophoresis or the automation of sample preparation and loading onto disks. Thus, the phrase “Even if the samples were manually loaded...” refers to sample loading onto a disk, not to disk insertion into the mass spectrometer.

Further, Applicant submits the Declarations of Prof. Brown, and in the particular the facts, reasoning and observations of at least paragraphs 17-19 of the First Declaration and at least paragraphs 17-20 of the Second Declaration, as evidence that that one of ordinary skill in the art would not have read Beavis as suggesting the automation of disk insertion or the seeking and combining of Weinberger or Wilhelmi with Beavis. Accordingly, Applicant submits at least for the foregoing reasons that Beavis does not motivate or suggest to one of ordinary skill in the art automation of disk insertion, and thus Beavis does not motivate one of ordinary skill to seek or combine Weinberger or Wilhelmi with Beavis.

Applicant submits that absent a proper motivation to modify and combine one or more of Weinberger and Wilhelmi with Beavis, the Office Action fails to establish a prima facie case of obviousness because the Office Action relies on these references as allegedly teaching a sample support transport mechanism as set forth in Applicant's

claims. Specifically, the Office Action at page 10 states that, "Since Beavis fails to teach specifically how to get the disk inside the mass spectrometer, that would have been left up to one of ordinary skill in the art." The Office Action alleges that the teachings missing from Beavis with regard to a "sample support transfer mechanism," as set forth in Applicant's claims, are to be found in Weinberger, alone or in combination with Wilhelmi, stating at pages 6-7, "It would have been obvious to one of ordinary skill in the art ... to incorporate the sample cassette as taught by either Wilhelmi or Weinberger and transporter mechanism of Weinberger into the Beavis device..." As a result, absent Weinberger and Wilhelmi, the Office Action fails to establish a prima facie case of obviousness because Beavis, alone or in combination with the knowledge of the art and one or more of Duffin, Ledford, and Bakker, do not teach or suggest all elements of Applicant's claims; and in particular, a "sample support transfer mechanism," as set forth in Applicant's claims. Accordingly, Applicant submits that a prima facie case of obviousness has not been established against claims 75-87, 90-94, 95 and 97, each considered as a whole, and Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103 of these claims.

2. The Office Action fails to establish a prima facie case of obviousness because it does not establish that one of ordinary skill in the art would not have had a reasonable expectation of successfully modifying and combining the cited references to practice any of Applicant's claims.

The Office Action appears to reach the conclusion that one of ordinary skill in the art would have had a reasonable expectation of successfully modifying and combining the cited references to produce the inventions of Applicant's claims 75-81 and 84-98, based on the reasoning that:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the sample cassette as taught by either Wilhelmi or Weinberger and transporter mechanism of Weinberger into the Beavis device because one of ordinary skill in the art would have recognized that having multiple sample trays in the sample chamber would allow the instrument to operate for extended periods of time without operator interaction and facilitate movement of the sample trays into and out of the mass spectrometer as shown by both Weinberger and Wilhelmi.

(Office Action, pages 6-7). Applicant must respectfully disagree with this conclusion and this reasoning.

Applicant submits that the conclusion of obviousness set forth in the Office Action is based on the assumption that one of ordinary skill in the art would necessarily have a reasonable expectation of successfully modifying and combining the cited references to produce Applicant's claims once such a person recognized that advantages might result from trying to do so. A motivation to combine is simply an invitation to try, it does not establish that the combination could have been made by one of ordinary skill in the art. Accordingly, Applicant must respectfully submit that, even if a motivation to combine and modify the cited references exists, this alone is not sufficient to establish a prima facie case of obviousness.

The Office Action provides no evidence that one of ordinary skill in the art would have had a reasonable expectation of successfully modifying and combining the cited references to produce Applicant's claims. The Office Action offers no factual support for the conclusion that such modifications (although nowhere illustrated or described in the prior art of record) would be well within the skill of one of ordinary skill. Rather, this conclusion is based on a subjective determination by the Office Action as to the abilities of one of ordinary skill in the art. Neither has the Office Action provided a definition of one of ordinary skill on which its conclusions are based. The Office Action at page 11 cites In re Sovish, 226 USPQ 771 (Fed. Cir. 1985) for the proposition that, "The Courts view one of ordinary skill in the art as a person having skill rather than one without skill." This statement, however, provides no guidance to Applicant as to what skill level the Office Action bases its arguments on and does not provide factual support for the Office Action's conclusions on what one of ordinary skill in the art would have had a reasonable expectation of successfully doing.

Applicant thus submits that a prima facie case of obviousness has not been established against claims 75-87, 90-94, 95 and 97, each considered as a whole, because the Office Action has not established that one of ordinary skill in the art would have had a reasonable expectation of successfully modifying and combining one or more of Weinberger and Wilhelmi with Beavis to provide at least a "sample support transfer



mechanism,” as set forth in Applicant’s claims. Applicant has submitted and herein submits that it is not obvious how to modify Weinberger or Wilhelmi to work in Beavis, either alone or in combination with one or more of the cited references, to produce Applicant’s claims. As set forth elsewhere herein, Beavis, alone or in combination with the knowledge of the art and one or more of Duffin, Ledford, and Bakker, do not teach or suggest a “sample support transfer mechanism,” as set forth in Applicant’s claims. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of under 35 U.S.C. § 103 of claims 75-87, 90-94, 95 and 97.

3. Even If the Office Action establishes a prima facie case of obviousness, Applicant has provided and provides evidence that rebuts the prima facie case and establishes that Applicant’s claims are nonobvious.

Applicant has submitted and herein submits that it is not obvious how to modify Weinberger or Wilhelmi to work in Beavis, either alone or in combination with one or more of the cited references, to produce Applicant’s claims. In addition, even if the Office Action establishes a prima facie case of obviousness, Applicant has provided and provides evidence to rebut the prima facie case and establish that claims 75-87, 90-94, 95 and 97 are novel and nonobvious over the cited references.

Applicant requests that the pending claims be considered anew in view of all the evidence including the Declarations and Applicant’s remarks. Applicant respectfully submits that to extent the Office Action has accorded little or no weight to the statements of fact, reasoning, observations and opinions of Prof. Brown in the First Declaration, such an approach is in error. First, the statements of fact, reasoning, observations and opinions in the Declarations are cognizant of and commensurate with the scope of the claims as evidenced by at least paragraphs 9 and 10 in the Declarations. Second, the facts, reasoning, observations and opinions in the Declarations are based on probative evidence.

Specifically, the facts, reasoning, observations and opinions in the Declarations on the state of art, which includes the amount of experimentation needed to modify and combine the cited references, the capabilities of one of ordinary skill in the art, and what one of ordinary skill in the art would or would not have had a reasonable expectation of successfully doing at the time of the invention, are based on the knowledge and

experience of Prof. Brown which includes over 20 years of experience in the mass spectrometry field, and contemporaneous knowledge of both the mass spectrometry field and those of ordinary skill in this field as it existed at the time of the invention. Applicant submits that such first hand practical knowledge of and familiarity with the art at the time of the invention, by an expert, is probative evidence of the state of the art. See, In re Piasecki, 223 USPQ 785, 789 (Fed. Cir. 1984).

Applicant further submits that reference to the subjective reaction of a person who was familiar with and practiced the art at the time the invention was made is the usual way of determining the ordinary skill in the art. Accordingly, as Prof. Brown has extensive contemporaneous knowledge of both the mass spectrometry field and those of ordinary skill in this field as it existed at the time of the invention, the Declarations clearly constitute evidence of the capabilities of one of ordinary skill in the art and what one of ordinary skill in the art would or would not have had a reasonable expectation of successfully doing at the time of the invention.

The nature of the matter sought to be established must be taken into consideration in assessing the probative value of an expert declaration. In this case, the declarations of Prof. Brown are introduced, inter alia, on the issue of the level of ordinary skill, which is a determination usually made by the subjective reaction of persons who are familiar with and practiced the art at the time the invention was made. As such, the statements of fact, reasoning, observations and opinions of Prof. Brown in the Declarations have a high probative value and are based on his years of experience in the field and contemporaneous direct experience with the field and its practitioners at the time of the invention. Opposed to Prof. Brown's statements of fact, reasoning, observations and opinions in the Declarations are the subjective conclusions of the Office Action as to what one of ordinary skill in the art would or would not have had a reasonable expectation of successfully accomplishing. The Office Action has failed to bring forth any evidence to counter the sworn testimony of Prof. Brown other than the subjective belief expressed in the Office Action as to what one of ordinary skill in the art would or would have been able to do. If the Examiner is relying on personal knowledge to support his finding that one of ordinary skill in the art would have been able to modify and combine the cited references to produce the invention of one or more of Applicant's claims, Applicant respectfully

request that the Examiner provide an affidavit or declaration setting forth the specific basis for the finding in accordance with 37 C.F.R. § 1.104(d)(2) and MPEP 2144.03 (8<sup>th</sup> Edition, 1<sup>st</sup> Revision February 2003). Absent such an affidavit or declaration, the Office Action should not substitute its judgment for that of an established expert in the art with first hand “real world” personal knowledge and experience with the field and its practitioners at the time of the invention.

Applicant respectfully submits that Applicant has clearly provided and herein provides probative evidence that: (i) rebuts the presumption in the Office Action that one of ordinary skill in the art would have been able to modify and combine the cited references to produce one or more of claims 75-87, 90-94, 95 and 97; and (ii) establishes that claims 75-87, 90-94, 95 and 97 are novel and nonobvious over the cited references.

Applicant again respectfully submits that claims 75-87, 90-94, 95 and 97 are novel and nonobvious over the cited references. Specifically, to the extent the Office Action asserts that Beavis teaches the dissociation and attachment of a sample support to a sample receiving stage, i.e., the top of a cylindrical rod that is the rotating part of a stepper motor. Applicant respectfully disagrees with this assertion.

First, the Office Action at page 10 admits that, “Since Beavis fails to teach specifically how to get the disk inside the mass spectrometer, that would have been left up to one of ordinary skill in the art.” As Applicant has previously submitted and again submits, one of ordinary skill in the art would not have had a reasonable expectation of successfully combining the cited references to produce,

a sample support transfer mechanism adapted to:

- (a) disassociate a first sample support from the sample receiving stage, transport the first sample support from the ion source chamber through an output port to the vacuum lock chamber and to associate the first sample support with the sample support holder; and
- (b) disassociate a second sample support from the sample support holder, transport the second sample support from the vacuum lock chamber through the output port to the ion source chamber and to associate the second sample support with the sample receiving stage

as set forth in one or more of claims 75-87, 90-91, 95 and 97, or these claims as a whole. Applicant further submits the statements of fact, reasoning, observations and opinions in the Declarations as evidence that one of ordinary skill in the art would not have had a reasonable expectation of successfully combining the cited references to produce one or more of claims 75-87, 90-91, 95 and 97.

Applicant's system claims require an ion source chamber comprising a sample receiving stage, i.e., the ion source chamber includes (or contains) a sample receiving stage. Second, Applicant's system claims require a sample transport mechanism adapted to disassociate a first sample support from the sample receiving stage, transport the first sample support from the ion source chamber through an output port to a vacuum lock chamber and transport a second sample support from the vacuum lock chamber through the output port to the ion source chamber and to associate the second sample support with the sample receiving stage. Beavis does not teach, suggest or motivate any mechanism or means for moving a sample support to an ion source chamber from another chamber and associating the sample support with a sample receiving stage within the ion source chamber. (See also, the Declarations at para. 18). Accordingly, any assertion in the Office action that Beavis teaches the dissociation and attachment of a sample support to a sample receiving stage is incorrect.

Assuming for the sake of argument that the means for dissociation and attachment in Beavis is operator intervention, i.e., manual dissociation and attachment, Beavis would still fail to teach, suggest or motivate any mechanism or means for moving a sample support to an ion source chamber from another chamber and associating the sample support with a sample receiving stage within the ion source chamber. More specifically, , if the top of the cylindrical rod initially is positioned in the ion source chamber and an operator was to associate a sample support with the top of the cylinder in the ion source chamber, then there would be no need to transport the sample support through an output port from a vacuum lock. Alternatively, if the sample receiving stage allegedly disclosed in Beavis is the top of a cylindrical rod that is the rotating part of a stepper motor. If a sample support is placed on the top of the cylindrical rod and moved through a vacuum lock into an ion source chamber, there could be no subsequent association of the sample support with a sample receiving stage in the ion source chamber because the association

occurred prior to introduction into the vacuum lock.

Further, Applicant submits the Declarations, and in the particular at least the facts, reasoning and observations of paragraphs 17-19 of the First Declaration and those of paragraphs 17-20 of the Second Declaration, as evidence that Beavis does not describe a sample transport mechanism adapted to disassociate a first sample support from the sample receiving stage, transport the first sample support from the ion source chamber through an output port to a vacuum lock chamber and transport a second sample support from the vacuum lock chamber through the output port to the ion source chamber and to associate the second sample support with the sample receiving stage. Applicant respectfully submits that the statements of fact, reasoning, observations, and opinions of Prof. Brown in the Declarations should be accorded weight on the issue of what Beavis describes and conveys to one of ordinary skill in the art.

Therefore, Applicant submits that Beavis does not teach, suggest or motivate any mechanism or means for moving a sample support to an ion source chamber from another chamber and associating the sample support with a sample receiving stage within the ion source chamber.

Applicant further submits that Weinberger, Wilhelmi, and Duffin do not cure the deficiencies of Beavis. As stated previously, Weinberger does not teach, suggest or motivate a transport mechanism that can disassociate, transport and associate sample supports as set forth in Applicant's claims. Although Weinberger illustrates disassociating a sample probe (30, 154) from a sample ring (152) with a push-rod type structure (159), Weinberger's sample probe is not associated with a sample receiving stage in an ion source chamber. (See also, the First Declaration at para. 22; the Second Declaration at para. 23). Rather, Weinberger's sample probe never leaves the tip of the push-rod until it returns to the sample ring. (See, e.g., Weinberger, Fig. 7 and col. 9, lines 5-17 (indicating that probe remains attached to tip of push-rod entire time probe undergoes irradiation); (See also, the First Declaration at paras. 22, 23; the Second Declaration at paras. 23, 24). Accordingly, Weinberger does not teach, suggest or motivate a sample support transport mechanism that is adapted to either "disassociate a ... sample support from [a] sample receiving stage," or "associate ... [a] sample support with [a] sample receiving stage" in an ion source chamber.

Further, Applicant submits the Declarations, and in the particular the facts, reasoning and observations at least of paragraphs 22-23 of the First Declaration and paragraphs 23-24 of the Second Declaration, and the reasoning therein, as evidence that Weinberger does not describe or suggest a transport mechanism that can disassociate, transport and associate sample supports as set forth in Applicant's claims. Specifically, the First Declaration makes clear in paragraph 23 that, "the Weinberger patent does not describe or suggest a structure that enables a sample support to be dissociated from a transport mechanism and associated with a receiving stage" and the Second Declaration makes clear at paragraph 24 that,

the Weinberger patent does not describe or suggest a structure that enables a sample support to be dissociated from a transport mechanism and associated with a receiving stage ...the structures described and suggested by the Weinberger patent are incompatible with the use of a receiving stage that provides x-y translation because they technically cannot be made to work with such a receiving stage because modification of the shaft of the Weinberger patent for combination with Beavis to execute x-y translation, would render the mechanism of the Weinberger patent inoperable for its intended purpose.

Further, Applicant submits the Declarations (and in the particular the facts, reasoning and observations at least of paragraphs 22-23 and 27 of the First Declaration and paragraphs 23-24 and 29 of the Second Declaration) as evidence that one of ordinary skill in the art would not have had a reasonable expectation of successfully modifying and combining Weinberger, or any other cited references, with Beavis to produce one or more of claims 75-87, 90-91, 95 and 97.

Applicant further submits that although Wilhelmi states "[f]rom the lock chamber the individual beads are transported separately by a pinch rod into the ion source for measurement and back to the cassette after measurement," Wilhelmi does not teach, suggest or motivate a sample support transfer mechanism adapted to associate a sample support with a sample receiving stage in an ion source chamber. (Wilhelmi, page 171, section 4.1). Rather, Figure 3 of Wilhelmi suggests that the sample support remains attached to the push rod. (See also, the First Declaration at para. 20, 21; the Second Declaration at para. 21, 22). Accordingly, Wilhelmi does not teach, suggest or motivate the sample support transport mechanism required by Applicant's claims.

Further, Applicant submits the Declarations, and in the particular the facts, reasoning and observations of paragraphs 20-21 in the First Declaration and paragraphs 21-22 in the Second Declaration, as evidence that Wilhelmi does not describe or suggest a transport mechanism that can disassociate, transport and associate sample supports as set forth in Applicant's claims. For example, the First Declaration makes clear in paragraph 21, and the Second Declaration makes clear in paragraph 22, that, "the Wilhelmi article does not describe or suggest that the sample filament (or bead) is ever detached from the end of the pushrod...during mass spectrometric analysis."

Applicant submits that Duffin also does not disclose or suggest any form of sample support transport mechanism. Rather, Duffin describes a sample translator. (See, e.g., Duffin, Fig. 1 and pages 1072-73; See also, the First Declaration at para. 24; the Second Declaration at para. 25). In addition, Applicant submits the Declarations, and in the particular the facts, reasoning and observations of paragraph 24 in the First Declaration and of paragraph 25 in the Second Declaration, as evidence that Duffin does not describe or suggest a transport mechanism that can disassociate, transport and associate sample supports as set forth in Applicant's claims. Moreover, even if Duffin's sample translator is considered to teach a sample receiving stage, Duffin provides no teaching, suggestion or motivation of any mechanism adapted to disassociate or associate a sample support with a sample receiving stage, or to transport the sample support to a sample receiving stage. Accordingly, Duffin does not teach, suggest or motivate the sample support transport mechanism required by Applicant's claims.

Further, claims 95 and 97 require that the vacuum lock chamber and the ion source chamber be in fluid communication and under a vacuum controlled environment during disassociation, transportation and association of the first and second sample supports. Based on the above discussion with respect to Beavis, the dissociation and association of a sample support holder with the top of a cylindrical rod would be accomplished manually while under ambient pressure, not a vacuum environment. (See also, the Declarations at para. 17; the Second Declaration at para. 28). None of Wilhelmi, Weinberger and Duffin cure this deficiency. Moreover, there is no manual activity that accomplishes the same result as set forth in claims 95 and 97. For example, there is no equivalent manual activity for a,

means for maintaining the vacuum lock chamber and the ion source chamber in fluid communication and under a vacuum controlled environment during disassociation, transportation and association of the first and second sample supports,

because a human cannot associate, transport or disassociate a sample support with a receiving stage as set forth in either claim 95 or 97 while the vacuum lock chamber and the ion source chamber are in continuous fluid communication and under a vacuum controlled environment during disassociation, transportation and association of the sample supports without exposing the operator to the detrimental effects of vacuum. Accordingly, Beavis, Wilhelmi, Weinberger and Duffin, either alone or in combination, do not teach, suggest or motivate at least that which Applicant recites in the final wherein or means clauses of claims 95 and 97, and Applicant respectfully requests reconsideration and withdrawal of the rejections to at least these claims.

Furthermore, Applicant submits that to combine two or more of Beavis, Weinberger, Wilhelmi, Duffin, Ledford, and Bakker (collectively "the cited references") to produce one or more of Applicant's would require undue experimentation by one of ordinary skill in the art. Applicant submits the Declarations, and in the particular the facts, reasoning and observations of paragraphs 17-28 in the First Declaration, and paragraphs 17-29 in the Second Declaration, as evidence that one of ordinary skill in the art would not have had a reasonable expectation of successfully modifying and combining two or more of the cited references to produce one or more of claims 75-87, 90-91, 95 and 97 and that such modification and combination would require undue experimentation by one of ordinary skill in the art. Therefore, considered as a whole, claims 75-87, 90-91, 95 and 97 are novel and nonobvious over Beavis, Weinberger, Wilhelmi, Duffin, Ledford, and Bakker, either alone or in proper combination, and Applicant respectfully requests reconsideration and withdrawal of this rejection for claims 75-87, 90-91, 95 and 97.

Applicant submits that method claims 92-94 also are nonobvious in view of the combination of cited references. Specifically, Beavis, Wilhelmi, Weinberger, and Duffin fail to teach, suggest or motivate a method of obtaining mass data that includes at least the steps of:



disassociating [a] first sample support from [a] sample receiving stage;  
transporting the first sample support from [an] ion source chamber to [a] vacuum lock chamber;  
associating the first sample support with [a] sample support holder;  
disassociating a second sample support from the sample support holder;  
transporting the second sample support from the vacuum lock chamber to the ion source chamber; [and]  
associating the second sample support with the sample receiving stage.

For the reasons discussed above for the system claims, the cited references fail to teach, suggest or motivate the sequential steps for disassociating and associating a sample support with a sample receiving stage and a sample support holder as set forth in claims 92-94. In addition, Applicant submits the Declarations, and in the particular the facts, reasoning and observations of paragraphs 17-29 in the First Declaration, and paragraphs 17-30 in the Second Declaration, as evidence that that one of ordinary skill in the art would not have had a reasonable expectation of successfully modifying and combining two or more of the cited references to produce one or more of claims 92-94 and that such modification and combination would require undue experimentation by one of ordinary skill in the art. Accordingly, Applicant submits that claims 92-94, considered as a whole, are novel and nonobvious over the cited references, either alone or in combination, and Applicant respectfully requests reconsideration and withdrawal of this rejection for claims 92-94.

### CONCLUSION

In view of the foregoing, Applicant respectfully submits that claims 75-87, 90-94, 95 and 97 are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephonic interview would serve to clarify issues or expedite the prosecution of the present application, the

undersigned attorney would welcome such an opportunity to discuss any outstanding issues and the Examiner is invited to call the undersigned at (508) 416-2472.



Respectfully submitted,

By 

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